WHAT IS CLAIMED IS

1. A composite of an aluminum material and a synthetic resin molding so constructed that part of the synthetic resin molding is so coupled with an anodic oxidation coating comprising innumerable pores having a diameter of 25nm or more made open innumerably in the surface of the aluminum material that it is intruded in the innumerable pores thereof.

2. A process producing a composite of an aluminum material and a synthetic resin molding characterized in that it comprises (a) an aluminum raw material in an electrolytic bath of phosphoric acid or sodium hydroxide is soaked, and then surface(s) thereof is/are subjected to an anodic oxidization treatment by a direct current electrolysis to form an anodic oxidation coating comprising innumerable pores having a diameter of 25 nm or more made open innumerably in the surface(s) thereof and (b) a portion or whole of the aluminum material with the anodic oxidation coating is then placed in a cavity in a predetermined shape in a metal mold, and molten synthetic resin is injected toward the partially or wholly exposed surface of the anodic oxidation coating in the cavity so that the molten synthetic resin may be invaded into the innumerable pores having a diameter of 25nm or more innumerably made open in the surface and also may be filled in the cavity under pressure to be molded.

3. The process for producing a composite according to claim 2, wherein the electrolytic bath is phosphoric acid or sodium hydroxide bath.

4. The process for producing a composite according to claim 2 or 3, wherein the aluminum raw material is anodized in the phosphoric acid bath comprising 15-40 % aqueous solutions of phosphoric acid in concentration and having a bath temperature in the range of 10-30℃ and a direct current electrolysis is carried out for 5-25 minutes, at a voltage of 20-100 V, at a current density of 0.5-2 A/dm^2, so that the anodic oxidation coating having the innumerable pores having a diameter of 30nm or more is formed.

5. The process for producing a composite according to claim 2 or 3, wherein the aluminum raw material is anodized in a bath comprising 0.05-0.3 mol aqueous solutions of sodium hydroxide, and having a bath temperature in the range of 10-30℃ and a direct current electrolysis is carried out for 5-25 minutes, at a voltage of 15-45 V, at a current density of 0.5-3 A/dm^2, so that an anodic oxidation coating having innumerable pores having a diameter of 25nm or more is formed.

6. The process for producing a composite according to claim 2, wherein the molten synthetic resin is injected into the cavity of the metal mold under a heated condition of the metal mold.

7. The process for producing a composite according any one of claims 2-6, wherein the aluminum raw material in the shape of a plate or a worked aluminum raw material bent into two or three dimensions by press working is used, and the synthetic resin mold is coupled with the partial or whole surface of the anodic oxidation coating thereof by injection molding.

8. The process for producing a composite according to any one of claims 2-5, wherein a portion of a desired- shaped aluminum material formed with the anodic oxidation coating formed by the phosphoric acid or sodium hydride bath is inserted into a cavity of a metal mold for insertion molding, and in this condition, molten synthetic resin is injected into the cavity and part of the molten synthetic resin is invaded into the innumerable pores of the anodic oxidation coating, and in this state is filled in the cavity under pressure to be molded.

9. The composite produced by the process for producing the composite as claimed in any one of claims 2-8.

10. A process for producing a composite characterized in that after such a composite is produced by the process for producing the composite according to any one of claims 2-8 that the synthetic resin mold is so coupled with the anodic oxidation coating of the desired shaped aluminum material that part thereof is intruded in the innumerable pores, the remaining part of the anodic oxidation coating that is not overlapped with the synthetic resin molding is applied with paint so that a corrosion resistant paint coating is formed thereon.

11. A process for producing a composite characterized in that after such a composite is produced by the process for producing the composite according to any one of claims 2-8 that the synthetic resin mold is so coupled with the anodic oxidation coating of the desired shaped aluminum material that part thereof is intruded in the innumerable pores, the remaining part of the anodic oxidation coating

that is not overlapped with an the synthetic resin molding is cleaned and is then subjected to an electrolysis using a sulfuric acid bath, so that a corrosion resistant coating of alumite is formed.

12. The process for producing a composite according to claim 10 or 11, wherein a synthetic resin having an elastic modulus that is able to absorb the difference between the linear expansion of aluminum and that of synthetic resin caused by a sudden temperature change is used as the synthetic resin for forming a synthetic resin molding.

13. A composite produced by applying the after-treatment according to the producing process as defined in claim 10 or 11.

14. A process for producing a composite comprising the steps: (a) applying anodic oxidization treatment to both side surfaces of a plate-shaped aluminum raw material by a phosphoric acid or sodium hydroxide bath to form an anodic oxidation coatings each comprising innumerable pores having a diameter of 25 nm or more innumerably made open in the each surface, (b) then forming a print coating on one side surface of both the anodic oxidation coatings of the anodic oxidization treated aluminum material, (c) then bending the same into second dimensions or third dimensions by press working, and (d) then placing the a portion or whole of the worked aluminum material with the anodic oxidation coatings in a cavity having a predetermined shape made in a metal mold, and injecting molten synthetic resin toward the exposed part or whole surface of the anodic oxidation coating in the cavity, so

that part of the molten synthetic resin is invaded into the innumerable pores open in the surface of the anodic oxidation coating and also is filled in the cavity under pressure to be molded.

15. A process for producing a composite comprising the steps: (a) forming a printed surface on one side surface of a plate-shaped aluminum raw material, (b) then bending the same into two dimensions or three dimensions by press working, (c) then applying an anodic oxidization treatment to the unprinted other side surface of the worked aluminum raw material by an electrolysis by a phosphoric acid or sodium hydroxide bath, so that an anodic oxidation coating composed of innumerable pores having a diameter of 25 nm or more made open in the surface is formed, and (d) then placing the part or whole of the worked aluminum material with the anodic oxidation coatings in a predetermined shaped cavity of a metal mold, and injecting molten synthetic resin toward the exposed part or whole surface of the anodic oxidation coating in the cavity, so that part of the molten synthetic resin is invaded into the innumerable pores open in the surface of the anodic oxidation coating and also is filled in the cavity under pressure to be molded.

16. A process for producing a composite comprising the steps: (a) forming a printed surface one side surface of a plate-shaped aluminum raw material, (b) then applying an anodic oxidization treatment to the unprinted other side surface of the worked aluminum raw material by an electrolysis by a phosphoric acid or sodium hydroxide bath,

so that an anodic oxidation coating composed of innumerable pores having 25 nm or more in diameter made open in the surface is formed, (c) then bending the same into two dimensions or three dimensions by press working, (d) then placing the part or whole of the worked aluminum material with the anodic oxidation coatings in a predetermined shaped cavity of a metal mold, and injecting molten synthetic resin toward the exposed part or whole of the anodic oxidation coating in the cavity, so that part of the molten synthetic resin is invaded into the innumerable pores open in the surface of the anodic oxidation coating and also is filled in the cavity under pressure to be molded.

17. A process for producing a composite characterized by using a metal mold for injection molding provided with a heating apparatus surrounding a vertical passage connecting to a sprue in the metal mold for injection molding and a gate connecting to the lower end of the vertical.

18. A process for producing a composite characterized in that the phosphoric acid or sodium hydride anodic treated anodic oxidation coating formed one surface of the aluminum material in the shaped of plate or bent into two dimensions or three dimensions by press working as defined in claim 2(a), is placed in a jig containing a heating apparatus in such a manner that the anodic oxidation coating may be directed upwards, and a synthetic resin molding in a desired shape is placed on the anodic oxidation coating and is pressed from above, and the contact portion of the synthetic resin mold with the anodic oxidation coating surface is

molten by the heating apparatus under the condition that it is being contact with the surface of the anodic oxidation coating under pressure, so that the molten resin is invaded into the innumerable pores of the anodic oxidation coating, and, and, in this state, an electric power supply is then cut off and is cooled to be solidified.

19. A composite produced by the producing process as defined in claim 18.

20. A process for producing a composite comprising the steps: (a) forming an aluminum raw material into a tubular one by an extruder, (b) then applying an anodizing treatment to the tubular aluminum raw material so that innumerable pores having a diameter of 25 nm or more made open in the surface thereof may be formed, and (c) then jointing a tubular-formed synthetic resin molding having a desired thickness under pressure with the circumferential surface and along the length direction of the anodic oxidation coating of the tubular aluminum material by a co-extruding molding machine, so that a composite in which the tubular aluminum material and the tubular synthetic resin molding are laminated integrally.

21. A composite produced by the producing process as defined in claim 20.